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Maintenance

FUNCTIONAL CHECK FLIGHT PROCEDURES

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This instruction establishes procedures for Acceptance/Functional Check Flights (FCF), Operational Check Flights (OCF) and High-Speed Taxi Checks (HSTC), within the 89th Airlift Wing (89 AW) Aircraft/Helicopter Branch as required by AFI 21-101, Maintenance Management of Aircraft, AFI21-101 AMCSUP1, technical order (T.O.) 1-1-300, 00-20-1 and applicable aircraft –1 and –6 T.O. and applies to all personnel in the 89 AW with the need to perform an FCF, HSTC, or OCF with the exception of Presidential Airlift Group.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

It incorporates FCF, OCF and HSTC procedures for aircraft assigned to the 89 AW. All office symbols and work center identifications reflect the current guidance of Air Force, AMC and the 89 AW.

1. Procedures.

1.1. Branch production supervisors or their designee:

- 1.1.1. Notify the maintenance operations center (MOC) and Andrews Support Division (ASD) quality assurance office (QA) when an FCF/HSTC/OCF is anticipated.
- 1.1.2. Notify current operations/1st Helicopter Squadron (1 HS) mission control when an FCF/HSTC/OCF requirement is confirmed and coordinate with current operations/1 HS mission control and ASD QA to set up the aircrew show time at maintenance briefing room.
- 1.1.3. Ensure the ASD Aircraft/Helicopter branch manager and the 89 MXG/CC are informed of any requirement for additional FCFs, OCFs or HSTCs if the aircraft has not been released on the initial FCF/OCF/HSTC.

1.1.4. Ensure all maintenance actions are completed. Ensure all Air Force Technical Order (AFTO) Form 781s and core automated maintenance system (CAMS) entries are documented properly in accordance with (IAW) the applicable aircraft –6, T.O. 00-20-1 and OIs. Notify MOC and ASD QA when the aircraft is ready for FCF. Ensure maintenance technician/specialist with specific discrepancy and system repair knowledge is present during the FCF briefing.

1.1.5. Ensure the AFTO Form 781 binder includes the maintenance discrepancies that generated the required FCF/HSTC/OCF and all previously annotated FCF/HSTC/OCF discrepancies. The AFTO Form 781H, Aerospace Vehicle Flight Status and Maintenance Document, from any previous flight or taxi check will also accompany the AFTO Form 781 binder.

1.1.6. Notify ASD QA of the location of the aircraft forms.

1.1.7. Forward transcribed 781As, completed FCF worksheets and the aircraft –6 checklists to ASD QA section for review.

1.1.8. Notify MOC of the aircraft status after the FCF/HSTC/OCF sortie. The aircraft will then be released to ASD Aircraft/Helicopter Branch.

1.1.9. Coordinate with ASD QA in determining if a FCF/OCF is appropriate before a hangar queen aircraft or cannibalization status aircraft is returned to regular service.

1.2. QA personnel:

1.2.1. Confirm FCF/HSTC/OCF requirements upon request.

1.2.2. After reviewing the maintenance forms, ASD QA will notify the production supervisor and MOC that the aircraft is ready for FCF/HSTC/OCF and confirm scheduled aircrew show time at maintenance briefing room.

1.2.3. Initiate the FCF checklist using the requirements from the aircraft –6 or applicable portions of the FCF checklist when an in-flight ops check is required. For 1st Helicopter Squadron aircraft, refer to [Attachment 2](#), Helicopter Matrix For Functional Check Flight.

1.2.4. Brief the FCF/HSTC/OCF crew on the reason for the FCF/HSTC/OCF, explain type of maintenance actions performed pertinent to the FCF/HSTC/OCF and other significant maintenance.

1.2.5. Conducts debrief and review the aircraft forms, FCF checklists and worksheets for completed actions, required signatures and corrective actions for accuracy.

1.2.6. Review all transcribed 781As and completed FCF worksheets along with –6 checklists for adequate corrective action and forward to plans, scheduling and documentation (PS&D) section.

1.3. Current Operations/1 HS Mission Control:

1.3.1. Notify 1st Airlift Squadron (1 AS)/99th Airlift Squadron (99 AS)/1st Helicopter Squadron when an FCF/HSTC/OCF requirement is anticipated/confirmed.

1.4. FCF/HSTC/OCF crews:

1.4.1. Accomplish the required FCF/HSTC/OCF in accordance with T.O. 1-1-300, applicable –6 T.O. or commercial equivalent and attend the QA briefing.

1.4.2. Return aircraft to maintenance if flight controls break or if other critical items fail to function properly before initiating another evaluation of the item.

1.4.3. Under no conditions will a second FCF takeoff be attempted after an aborted FCF/HSTC/OCF takeoff. Aircraft landing gear brakes will be inspected for excessive heat.

1.4.4. The aircraft commander will update current operations/1 HS mission control after each FCF/HSTC/OCF.

1.4.5. To minimize brake and tire wear, configure aircraft with the minimum fuel practical to accomplish HSTC.

1.4.6. Ensure aircraft is prepared for flight and the exceptional release (ER) is signed off. Do not conduct HSTC, self-propelled movement of the aircraft or any operation where the possibility of becoming airborne exists, with less than the applicable -1 operational fuel minimums onboard.

1.4.7. Aircrews performing HSTC will complete a take-off data card to indicate the highest speed expected to ensure sufficient stopping distance is available for existing runway conditions without exceeding normal brake energy limits.

1.5. FCF Officer in Charge and ASD QA Supervisor of FCFs:

1.5.1. In the event the aircraft manufacturer does not provide guidance as to what maintenance requires an FCF, ASD QA and MAJCOM/LG, will develop an appropriate FCF checklist and procedures.

1.5.2. Establish an FCF training and certification program.

1.5.3. Review FCF results on a continual basis and recommend modified FCF criteria and procedures.

1.5.4. Work with maintenance and operations in areas of flight safety, standardization and operational maintenance priorities with respect to the FCF program.

1.6. OCF:

1.6.1. OCFs will be accomplished when an operational check is not listed as a -6 FCF requirement.

1.6.2. Test equipment does not exist to perform the operational check on the ground.

DAVID S. GRAY, Brigadier General, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 21-101, *Maintenance Management of Aircraft*

AFI 21-101 AMCSUP1, *Maintenance Management of Aircraft*

T.O. 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*

T.O. 00-20-1, *Aerospace Equipment Maintenance General Policies and Procedures*

Abbreviations and Acronyms

AFTO—Air Force Technical Order

ASD—Andrews Support Division

1 HS—1st Helicopter Squadron

1 AS—1st Airlift Squadron

99 AS—99th Airlift Squadron

CAMS—Core Automated Maintenance System

ER—Exceptional Release

FCF—Acceptance/Functional Check Flights

HSTC—High-speed Taxi Checks

IAW—In Accordance With

MAJCOM—Major Command

MOC—Maintenance Operations Center

MXG/CC—Maintenance Group Commander

OCF—Operational Check Flights

OI—Operational Instruction

PS&D—Plans Scheduling and Documentation

QA—Quality Assurance Office

T.O.—Technical Order

Attachment 2

HELICOPTER MATRIX FOR FUNCTIONAL CHECK FLIGHT

FCF REASON	ENGINE RUN UP	HOVER	CLIMB	LEVEL FLIGHT	MILITARY POWER CLIMB	DECENT
Aircraft removed from Storage	ALL	ALL	ALL	ALL	ALL	ALL
Engine Change	1,2,3,6,7,8,9a-h, 10, 11	3,4,6a-g, 7a-g, 8	4	2,3,4a-n, 5	ALL	NONE
CGB Change	1,2,3,6,7,8,9a-h, 11	3,4,6a-g, 7a-g, 8	4	2,3,4a-n, 5	ALL	ALL
Auto/Manual Fuel Control/Eng Fuel Pump Removed/Replace/Reinstalled	1,2,3,6,7,8,9a-h, 10,11	3,6a-g, 7a-g, 8	NONE	3,4a-n, 5	ALL	NONE
MRB or MRH Pitch Change Link Adj/Replaced	4,12	1,2,3,4,5	1,2	1,2	NONE	ALL
Flight Control Rig/Adj/Replaced/ Reinstall	4,12	1,2,3,4,5	1,3	1,2	NONE	ALL
90 GB Remove/Replaced/Reinstall	4,12	2,4,5	1,2,3	1,2	NONE	NONE
Main Transmission Removed/Replaced/Reinstall	4,5,9b,12	1,2,4,5	1,2	1,2, 4j,k, m	NONE	ALL
Major Structural Modification or Repair	ALL	ALL	ALL	ALL	ALL	ALL
Servo Change	4,5,12	1,2,4,5	1,2	1,2,6	NONE	ALL
Engine Rigging	1,2,3,6,7,8,9a-h, 11	3,6a-g, 7a-g, 8	NONE	3,4a-n, 5	1	NONE
After Phase	ALL	ALL	ALL	ALL	ALL	ALL

FCF REASON	ENGINE RUN UP	HOVER	CLIMB	LEVEL FLIGHT	MILITARY POWER CLIMB	DECENT
Torque Cal. & Torque Control Unit/Signal Data Converter Adj/Remove/Replace/Reinstall	6,8,9a-h	6a-g, 7a-g, 8	NONE	3,4a-n, 5	ALL	NONE
Tail Rotor Blade or Tail Rotor Hub/Pitch Link & Control Rod Adj/Remove/Replace/Reinstall	4,12	1,2,4,5	1,2,3	1,2	NONE	NONE
Tail Rotor Servo Change	4,5,12	1,2,4,5	1,2,3	1,2,6	NONE	NONE
NF Governor Change	1,2,3,6,8, 9a-h	3,6a-g, 7a-g, 8	NONE	3,4a-n, 5	ALL	NONE
Automatic & Manual Fuel Control Topping Adjustment	1,2,3,6,8, 11	6a-g, 7a-g, 8	NONE	NONE	NONE	NONE